

WHAT IS CLAIMED IS:

1. A method of producing a thin-film magnetic head, comprising:

5 a heater member forming step of forming a heater member having a heater layer with a predetermined electrical resistivity and a cap layer with an electrical resistivity higher than that of the heater layer, provided on the heater layer;

10 an electrode film forming step of forming an electrically conductive electrode film on the heater member;

15 a bump forming step of forming an electrically conductive bump on part of the electrode film by a plating method using part of the electrode film as a plating electrode; and

an electrode film removing step of removing the rest of the electrode film, using the bump as a mask.

20 2. The method according to Claim 1, wherein the heater member forming step is to form the heater member so that the heater layer has an exposed portion exposed to the outside,

wherein the electrode film forming step is to form the electrode film over the cap layer and the exposed portion of the heater layer, and

25 wherein the bump forming step is to form the bump on a portion of the electrode film in contact with the

exposed portion of the heater layer.

3. The method according to Claim 1, wherein the electrical resistivity of the cap layer is four or more times the electrical resistivity of the heater layer.

5           4. The method according to Claim 1, wherein the heater layer contains one selected from Cu, Au, Ni, Co, Ta, W, Mo, Rh, and alloys of these.

10           5. The method according to Claim 1, wherein the cap layer contains one selected from Ta, Ti, Pt, Ru, Rh, Hf, Cr, Ni, Co, W, Mo, Rh, and alloys of these.

6. The method according to Claim 1, wherein the heater member forming step is to form at least one of the heater layer and the cap layer by sputtering.

7. A thin-film magnetic head comprising:

15           a heater layer with a predetermined electrical resistivity forming a current-carrying path of a predetermined shape;

20           an electrically conductive electrode film member located so as to face a portion of one principal surface of the heater layer and electrically connected to the heater layer;

25           a cap layer with an electrical resistivity higher than that of the heater layer, provided in correspondence to the shape of the current-carrying path on the other portion of said one principal surface of the heater layer; and

an electrically conductive bump formed on the electrode film member by plating.

5           8.    The thin-film magnetic head according to Claim 7, wherein the electrode film member is laid on said one portion of the heater layer.

          9.    The thin-film magnetic head according to Claim 7, wherein the electrical resistivity of the cap layer is four or more times the electrical resistivity of the heater layer.

10           10.   The thin-film magnetic head according to Claim 7, wherein the heater layer contains one selected from Cu, Au, Ni, Co, Ta, W, Mo, Rh, and alloys of these.

15           11.   The thin-film magnetic head according to Claim 7, wherein the cap layer contains one selected from Ta, Ti, Pt, Ru, Rh, Hf, Cr, Ni, Co, W, Mo, Rh, and alloys of these.

20           12.   A head gimbal assembly comprising a base, a thin-film magnetic head formed on the base, and a gimbal adapted to fix the base,

          wherein the thin-film magnetic head comprises a heater layer with a predetermined electrical resistivity forming a current-carrying path of a predetermined shape; an electrically conductive electrode film member located so as to face a portion of one principal surface of the heater layer and

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electrically connected to the heater layer; a cap layer with an electrical resistivity higher than that of the heater layer, provided in correspondence to the shape of the current-carrying path on the other portion of said one principal surface of the heater layer; and an electrically conductive bump formed on the electrode film member by plating.

13. A hard disk drive comprising a base, a thin-film magnetic head formed on the base, and a recording medium opposed to the thin-film magnetic head,

wherein the thin-film magnetic head comprises a heater layer with a predetermined electrical resistivity forming a current-carrying path of a predetermined shape; an electrically conductive electrode film member located so as to face a portion of one principal surface of the heater layer and electrically connected to the heater layer; a cap layer with an electrical resistivity higher than that of the heater layer, provided in correspondence to the shape of the current-carrying path on the other portion of said one principal surface of the heater layer; and an electrically conductive bump formed on the electrode film member by plating.